Sciatic Schwannoma-Rare Cause of Sciatica: A Case Report

Siyatik Sinirde Schwannoma-Nadir Siyatik Nedeni: Olgu Sunumu

Siyatalji / Sciatalgia

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Özet

Schwannoma periferik sinirlerin en sık görülen tümörlerindendir. Bu olgu sunumunda non-diskojenik siyatalji semptomlarına neden olan ve cerrahi tedavi uygulanan siyatik sinirde schwannoma tartışıldı.

Anahtar Kelimeler

Siyatalji; Schwannoma; Tümör

Abstract

Schwannomas are the most common benign tumors of the peripheral nervous system. In this article we reported a case of sciatic nerve schwannoma, cause of nondiscogenic sciatica, which was treated successfully with surgical excision.

Keywords

Sciatalgia; Schwannoma; Tumor

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Introduction

Sciatica is a common disorder, which is frequently caused by lumbar disc herniation [1]. On the other hand some intraspinal or extraspinal pathologic causes which involve the sciatic nerve may result with sciatica. The intraspinal non-discogenic sciatica (NDS) can be diagnosed by lumbar vertebrae imaging; but the extra spinal causes are often misdiagnosed because the clinicians usually focus on the lumbar spine as the cause of disorder [1]. The extra pelvic causes which affect the sciatic nerve usually localized distally from the sciatic notch [1].

Schwannomas are the most common benign tumors of the peripheral nervous system, which are encapsulated and composed of Schwann cells, but sciatic schwannomas are rare [2].

In this article we reported a case of sciatic schwannoma which was treated successfully with surgical excision.

Case Report

28 year old male patient had right posterior hip pain spreading through the thigh for 2 years. He went to different outpatient clinics at four times. They made physical examinations, radiographic examinations and at last screening magnetic resonance imaging (MRI) evaluation of the lumbar spine. According to these evaluations, it was thought that the radicular pain was related to lumbar disc herniation. Non-steroid anti-inflammatory drugs (NSAID) and myorelaxant drugs were prescript.

Six weeks after his last visit to the neurosurgery outpatient clinic, the patient visited our Orthopedics and Traumatology outpatient clinic because during this period his symptoms were not resolved. The patient didn't have family history of diseases. Neurosurgical examination revealed a well-developed male with intact cranial nerves and preservation of higher cognitive functions. He had normal reflexes with down-going toes and no signs of upper motor neuron disease. Motor strength was full to hand resistance with normal gait. Sensation was normal to light touch and pinprick, position sense was within normal limits. Tinnel sign was consistently elicited with palpation of the affected right posterior hip and at the track of sciatic nerve. The Laseque test was positive at the affected side. He had no evidence of cutaneous abnormalities such as cafe´ au lait spots or freckling. Slit-lamp examination showed no posterior subcapsular cataracts or Lisch iris nodules.

We performed right hip and thigh magnetic resonance scan. This MRI study showed a round shaped and 20x17x15 mm sized mass which was localized at the posterior aspect of the hip joint near sciatic nerve. The homogeneous structured mass was hypo intense in T1 weighted, and hyper intense in T2 weighted images with intravenous contrast intake (Figure 1a, 1b, 1c). The patient subsequently was underwent surgical removal of the mass. With the patient in the lateral decubitus position, a posterolateral incision was made over the sciatic nerve. The mass was surrounded by the fascicles of the sciatic nerve. The unaffected nerve fascicles, displaced by the tumor, were dissected from the tumor capsule and the nerve element from which the tumor arose was identified. The tumor bearing nerve element was a very thin fascicle. The tumor and the fascicle was en-bloc resected without any disruption of the sciatic nerve as Oberle et al [3] described the surgical technique of excision (Figure 2). The mass was removed en bloc and histopathologically it was diagnosed as a schwannoma. The patient did not have neurological deficits postoperatively and his symptoms were

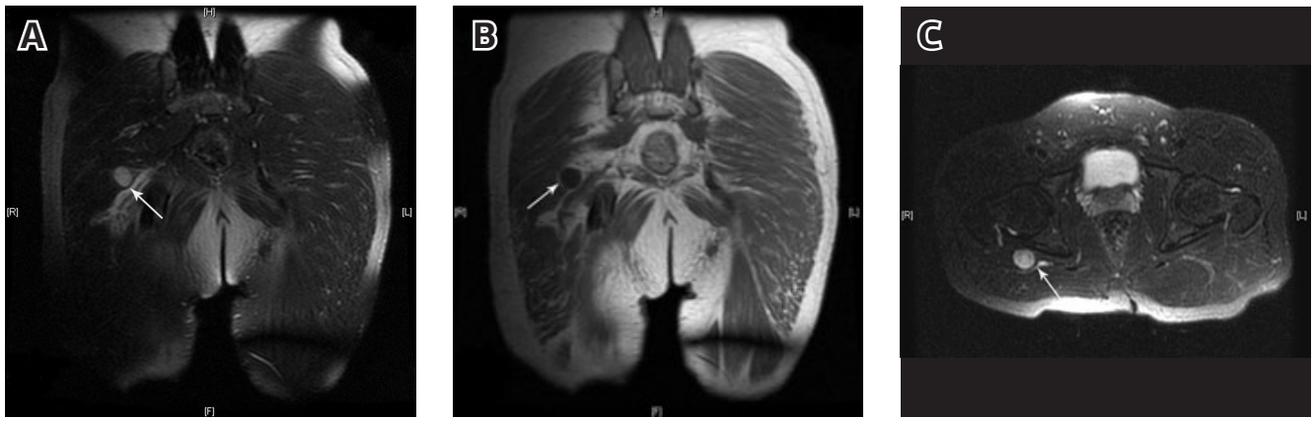


Figure 1. The appearance of the lesion on T2 weighted coronal MRI image (A), The appearance of the lesion on T1 weighted coronal MRI image (B), The appearance of the lesion on T2 weighted sagittal MRI image (C).

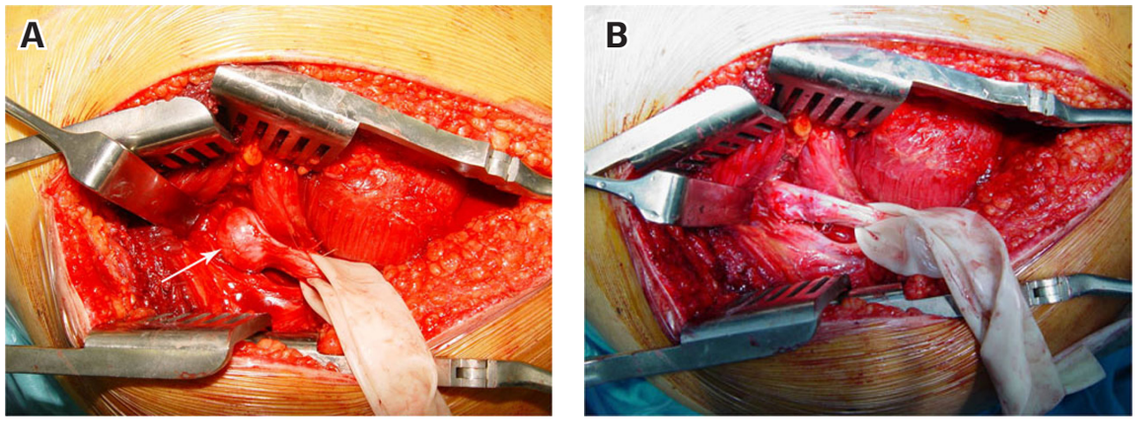


Figure 2. The appearance of the sciatic nerve and schwannoma during surgery (A), The appearance of the sciatic nerve after total excision of the mass (B).

resolved. After two years follow-up the patient did not have any complaints and recurrence.

Discussion

The causes of sciatica can be classified as intraspinal and/or extraspinal disorders along the lumbar nerve roots and sciatic nerve. In 20% of cases, the discogenic and non-discogenic disorders cause sciatica [1]. In clinical practice the non-discogenic and extraspinal causes of sciatica are often misdiagnosed because of the higher sensitivity lumbar disc hernias [1]. The differential diagnosis can be made by careful physical examination, neurological examination and radiological evaluation.

The peripheral nerve tumors are usually benign lesions. The most common benign peripheral nerve tumors are schwannomas, which arise from the schwann cells of peripheral nerves [4-6]. One of the uncommon origins of the schwannomas is sciatic nerves, and they are more common at the females who are in the second to fifth decades [4]. The schwannomas are histological comprised of densely packed spindle cells as in Antoni type A or more loosely textured stroma as in Antoni type B. They are usually solitary lesions, but multiple lesions can be seen [4]. Multiple schwannomas can be found in patients with neurofibromatosis type II [4]. Our patient did not have the physical examination characteristics of neurofibromatosis type II.

The clinical presentation of the lesions can be misdiagnosed, and there may be a difficulty of differential diagnosis between discogenic and non-discogenic causes [4]. Ghaly et al. reported a posterior tibial nerve schwannoma case who had been misdiagnosed as psychosomatic disorder for 10 years [6], and also there are other case reports which exists mid thigh sciatic nerve which mimicks plantar neuropathy foot pain [4]. Therefore steps of the physical examination must be done before making the diagnosis [4].

In our case diagnosis of the lesion at the sciatic nerve was made by palpation and Tinnel test. The only unique clue to the diagnosis was the Tinnel's sign produced by tapping on the posterior thigh in patients like in the other cases at the literature [4]. For further evaluation of the lesion MRI of the hip was performed and diagnoses were approved.

Sintzoff et al [7] and Kralick et al [4] described sciatic nerve schwannomas, and emphasized the MRI characteristics of the lesion as increased signal on T2-weighted fast spin-echo and short tau inversion recovery fast spin-echo pulse sequences with clinical and electrophysiological evidence of nerve injury. Persing [8] postulated that a ''double crush'' nerve injury could explain their patient's symptoms, but in our patient there was not any history of surgery or trauma at the sciatic nerve. In our case we could not see the same MRI characteristics of nerve injury, but other MRI characteristics of the schwannoma helped us to plan our surgery and made a successful excision of the lesion with good recovery.

Oberle et al [3] reported 16 cases that had peripheral nerve schwannoma (one sciatic nerve) and performed total excision of the mass without recurrences. They emphasized that the surgeon who would do the procedure must have special expertise in peripheral nerve surgery to reduce the risk of neurological deficits. We made the surgical excision of the schwannoma within the principles of microsurgery under microsurgical equipment and microscope.

In conclusion sciatic nerve schwannoma, one of the nondiscogenic sciatica causes, could be misdiagnosed during clinical practice. The diagnosis can be successfully done by physical examination and MRI examination of the lesion at the sciatic nerve. Good clinical results can be obtained with total surgical excision of the mass under microsurgical principles.

Competing interests

The authors declare that they have no competing interests.

References

1. Kulcu DG, Naderi S. Differential diagnosis of intraspinal and extraspinal nondiscogenic sciatica. J Clin Neurosci 2008;15(11):1246-52.
2. Consales A, Poppi M, Stumpo M. Sciatic schwannoma spanning the sciatic notch: removal by an anterior, transabdominal approach. Br J Neurosurg 2006;20(1):46-8.
3. Oberle J, Kahamba J, Richter HP. Peripheral nerve schwannomas--an analysis of 16 patients. Acta Neurochir (Wien) 1997;139(10):949-53.
4. Kralick F, Koenigsberg R. Sciatica in a patient with unusual peripheral nerve sheath tumors. Surg Neurol 2006;66(6):634-7.
5. Egelhoff JC, Bates DJ, Ross JS, Rothner AD, Cohen BH. Spinal MR findings in neurofibromatosis types 1 and 2. AJNR Am J Neuroradiol 1992;13(4):1071-7.
6. Ghaly RF. A posterior tibial nerve neurilemoma unrecognized for 10 years: case report. Neurosurgery 2001;48(3):668-72.
7. Sintzoff SA Jr, Bank WO, Gevenois PA, Matos C, Noterman J, Flament-Durand J et al. Simultaneous neurofibroma and schwannoma of the sciatic nerve. Am J Neuroradiol 1992;13(4):1249-52.
8. Persing JA, Nachbar J, Vollmer DG. Tarsal tunnel syndrome caused by sciatic nerve schwannoma. Ann Plast Surg 1988;20(3):252–5.

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